In the Claims

1-11. (Cancelled)

12. (Currently Amended) A method for processing signals of a detector comprising at least one sensor for monitoring danger parameters and an electronic evaluation system assigned to the at least one sensor wherein signals from the at least one sensor are compared with specified parameters, and the signals are analyzed on the basis of [their] an occurrence of the signals and depending on [their] a pattern of the occurrence ~~pattern~~ are classified as interference signals.

13. (Currently Amended) A method according to Claim [1]12, wherein the classification of signals as interference signals triggers an appropriate adjustment of the specified parameters.

14. (Currently Amended) A method according to Claim [2]13, wherein the analysis of the signals ~~to determine its validity~~ is tested for validity prior to the adjustment of the parameters and the parameters are adjusted as a function of the validity test.

15. (Currently Amended) A method according to Claim [3]14, wherein the validity is tested by methods based on multiple resolution.

16. (Currently Amended) Method according to Claim [4]15, wherein wavelets, selected from the group consisting of biorthogonal and second generation wavelets and lifting schemes are used for the validity test.

17. (Currently Amended) A method according to Claim [5]16, wherein coefficients of the wavelets selected from the group consisting of approximation coefficients, ~~and approximation coefficients~~ and detailed coefficients have expected values which are determined and compared at different resolutions.

18. (Currently Amended) A method according to Claim [6]17, wherein the coefficients are determined in an estimator.

19. (Currently Amended) A method according to Claim [6]17, wherein the coefficients are determined by means of a neuronal network.

20. (Currently Amended) A detector for carrying out the method according to Claim [1]12, comprising at least one sensor for sensing a danger parameter and an electronic evaluation system comprising a microprocessor for evaluating and analyzing signals emitted from at least one sensor wherein the microprocessor comprises a software program having a learning algorithm, based on multiple resolution, for analyzing the signals of the at least one sensor.

21. (Currently Amended) A detector according to Claim [9]20, wherein the sensor signals are analyzed by the learning algorithm for their occurrence and a validity test is carried out on the analysis by a learning algorithm which uses wavelets selected from the group consisting of biorthogonal [and] wavelets, second generation wavelets [- - - -] and lifting schemes.

22. (Currently Amended)A detector according to Claim [9]20, wherein in that the learning algorithm uses neuro-fuzzy methods.

23. (Currently Amended) A detector according to Claim [10]22, wherein the learning algorithm comprises two equations

$$f_m(x) = \sum \hat{c}_{m,n} \cdot \varphi_{m,n}(x) \text{ (}\Sigma\text{over all n's) and}$$
$$\hat{c}_{m,n}(k) = \sum \tilde{\varphi}_{m,n}(x_i) \cdot y_i / \sum \tilde{\varphi}_{m,n}(x_i) \text{ (}\Sigma\text{over all i's=1 to k),}$$

in which $\varphi_{m,n}$ denotes scaling functions, $\hat{c}_{m,n}$ denotes approximation coefficients and y_k denotes the k^{th} input point of the neuronal network and $\tilde{\varphi}_{m,n}$ is the dual function of $\varphi_{m,n}$.